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EXAMINER

GUPTA, VANI

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte GILBERT D. FEKE, DOUGLAS O. WOOD,
WILLIAM E. McLAUGHLIN, DOUGLAS L. VIZARD, WARREN M.
LEEVEY, SEAN ORTON, and WILLIS MORSE

Appeal 2015-001875
Application 12/716,331¹
Technology Center 3700

Before PHILIP J. HOFFMANN, KENNETH G. SCHOPFER, and
AMEE A. SHAH, *Administrative Patent Judges*.

SCHOPFER, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the rejection of
claims 1–3, 7–9, 11, 12, and 23–30. We have jurisdiction under 35 U.S.C.
§ 6(b).

We AFFIRM-IN-PART.

BACKGROUND

According to Appellants, the Specification “relates generally to the
field of imaging systems, and more particularly to multi-modal imaging of

¹ According to Appellants, the real party in interest is Bruker Biospin
Corporation. Appeal Br. 3.

objects. More specifically, the invention relates to a graphical user interface for visualizing and analyzing a series of sets of multi-modal images, and synthesized images thereof: of an object undergoing incremental angular displacement.” Spec. 1, ll. 26–30.

CLAIMS

Claims 1–3, 7–9, 11, 12, and 23–30 are on appeal. Claim 1 is illustrative of the appealed claims and recites:

1. A method for forming a sequence of images of a subject, comprising:
 - a) obtaining at least first and second image sets of the subject, wherein each image set has a given angular displacement relative to an axis of rotation of the subject, each image set comprising at least:
 - (i) a first component image of a first diagnostic modality at the given angular displacement wherein said first diagnostic modality is taken from the group consisting of a planar x-ray modality, a planar fluorescence modality, a planar bright field modality, a planar luminescence modality and a planar radioisotopic modality; and
 - (ii) a second component image of a second diagnostic modality different from the first diagnostic modality wherein the second component image is co-registered to the first component image at the given angular displacement and wherein said second diagnostic modality is taken from the group consisting of a planar x-ray modality, a planar fluorescence modality, a planar bright field modality, a planar luminescence modality and a planar radioisotopic modality;
 - b) receiving a selection for a selected image set for display;

c) forming a synthesized image by combining image data from the at least first and second component images of the selected image set; and

d) displaying the synthesized image.

Appeal Br. 17.

REJECTIONS²

1. The Examiner rejects claims 23 and 30 under 35 U.S.C. § 102(b) as anticipated by McCroskey.³
2. The Examiner rejects claims 1–3 and 7–9 under 35 U.S.C. § 103(a) as unpatentable over Kohler⁴ in view of Yared.⁵
3. The Examiner rejects claim 11 under 35 U.S.C. § 103(a) as unpatentable over Kohler in view of Yared and Hossack.⁶
4. The Examiner rejects claim 12 under 35 U.S.C. § 103(a) as unpatentable over Kohler in view of Yared and Allison.⁷
5. The Examiner rejects claim 24 under 35 U.S.C. § 103(a) as unpatentable over Kohler in view of Yared and Jensen.⁸
6. The Examiner rejects claim 25 under 35 U.S.C. § 103(a) as unpatentable over Kohler in view of Yared and Ichihara.⁹

² Although claim 26 is listed as rejected on the cover page, the Final Action does not include a rejection of claim 26. *See* Final Act. 1–17. To the extent there is an outstanding rejection of this claim, it is addressed below in conjunction with the rejection of claim 1.

³ McCroskey et al., US 2006/0239398 A1, pub. Oct. 26, 2006.

⁴ Kohler et al., US 2009/0116717 A1, pub. May 7, 2009.

⁵ Yared, US 2007/0238957 A1, Oct. 11, 2007.

⁶ Hossack, US 6,423,002 B1, iss. July 23, 2002.

⁷ Allison et al., US 5,517,193, iss. May 14, 1996.

⁸ Jensen et al., US 7,502,174 B2, iss. Mar. 10, 2009.

⁹ Ichihara et al., US 2006/0241402 A1, pub. Oct. 26, 2006.

7. The Examiner rejects claim 27 under 35 U.S.C. § 103(a) as unpatentable over McCroskey in view of Jensen.
8. The Examiner rejects claim 28 under 35 U.S.C. § 103(a) as unpatentable over McCroskey in view of Kokubun.¹⁰
9. The Examiner rejects claim 29 under 35 U.S.C. § 103(a) as unpatentable over McCroskey in view of Ichihara.

DISCUSSION

Appellants raise arguments only with respect to the rejections of the independent claims, 1 and 23. *See* Appeal Br. 13–16.

Claim 1

With respect to claim 1, the Examiner relies on the combination of Yared and Kohler. The Examiner finds that Kohler teaches a method as claimed, except that Kohler does not disclose a second component image as claimed. Final Act. 4–5. More specifically, the Examiner finds that Kohler teaches a first component image from a first diagnostic modality including planar x-ray imaging, and Kohler teaches obtaining a second set of images from a given angular displacement but does not disclose that the second set of images are taken from one of the group of imaging modalities required by the claim language. *Id.* at 5. Regarding this limitation, the Examiner finds:

Nonetheless, Yared teaches that it is possible to provide a first image comprising an x-ray tomographic image and to provide a second image comprising an image type different than the first type comprising an optical tomographic image and combining them. The second image type is taken of course from a second diagnostic modality different from the first diagnostic modality ([0039 – 0041], [0090], [0103], [0109] – [0114]). Here, the

¹⁰ Kokubun et al., US 8,055,045 B2, iss. Nov. 8, 2011.

images are taken also from various angular displacement (measured in degrees, *figs. 2 and 3*).

Id. The Examiner concludes:

Accordingly, it would *have been* obvious to one of ordinary skill in the art, having the teachings of Kohler and Yared before one *at the time the invention was made*, to modify the method of Kohler with the combined imaging modality teachings of Yared to provide additional imaging capabilities for acquiring additional imaging information, and improving image quality of Kohler (as suggested by Yared: Abstract; [0020 – 0022]; and also suggested by Kohler: [0050]).

Id. at 6.

We are persuaded by Appellants’ argument that the Examiner erred in finding that one of ordinary skill in the art would have found it obvious to combine of Kohler and Yared to arrive at a method as claimed. *See* Appeal Br. 14–16. In particular, we find that the Examiner has failed to adequately explain how the teachings of Yared would have led one of ordinary skill in the art to modify Kohler’s method to include obtaining a first component image from a first planar modality as claimed and obtaining a second component image from a second planar modality different from the first, as claimed. Although the Examiner indicates that Yared “teaches that it is possible” to take a first image from a first modality and a second image from a second modality, the Examiner does not adequately explain, and the cited portions of Yared do not make clear, how Yared teaches the use of a second planar imaging modality as claimed or how Yared’s teachings would have led one of ordinary skill in the art to select two different modalities for the first and second images from the group consisting of a planar x-ray modality, a planar fluorescence modality, a planar bright field modality, a

planar luminescence modality and a planar radioisotopic modality as required by the claim.

Accordingly, we do not sustain the rejection of claim 1. For the same reasons and because the Examiner does not rely on any of the art of record to cure the deficiency in the rejection of claim 1, we do not sustain the rejections of dependent claims 2, 3, 7–9, 11, 12, and 24–26.¹¹

Claim 23

With respect to claim 23, the Examiner finds that McCroskey discloses a method as claimed. Final Act. 2–4. With respect to this rejection, Appellants argue only that McCroskey does not disclose obtaining first, second, and third images with each occurring “at the given angular displacement relative to an axis of rotation of the subject.” Appeal Br. 13. Appellants assert that McCroskey’s method keeps the patient at a constant position and rotates the imaging apparatus and is thus incapable of anticipating the claim. *Id.* at 13–14. Appellants also asserts that the claim language requires that the subject is rotated because “the claim language is axis of rotation of the subject [and] is NOT rotation about the subject.” Reply Br. 3.

We are not persuaded by Appellants’ argument. Rather, we agree with the Examiner that the claim does not actually require any rotation of the subject. Ans. 12. The claim states only that “each image set has a given angular displacement relative to an axis of rotation of the subject.” We are not persuaded that the claim expressly requires any rotation of the subject.

¹¹ As noted above, the cover page of the Final Action lists claim 26 as rejected. To the extent there is an outstanding rejection of claim 26, such rejection is not sustained for the same reasons.

Placing the imaging apparatus at a given angular displacement relative to an axis of rotation of a subject may be achieved by either rotating the subject about that axis or rotating the imaging apparatus about that axis, and the claim language does not exclude either of these possibilities. Thus, we are not persuaded that the claim language provides the distinction that Appellants are asserting. Accordingly, we are not persuaded of reversible error and we sustain the rejection of claim 23. Because Appellants' do not provide any separate arguments regarding the remaining claims, we also sustain the rejections of claim 30 as anticipated and claims 27–29 as obvious for the same reasons.

CONCLUSION

For the reasons set forth above, we reverse the rejections of claims 1–3, 7–9, 11, 12, and 24–26, and we affirm the rejections of claims 23 and 27–30.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART